

**CALIFORNIA ENERGY COMMISSION** 1516 Ninth Street Sacramento, California 95814Main website: [www.energy.ca.gov](http://www.energy.ca.gov)

**ADDITIONAL EXPLANATIONS  
FOR  
PROPOSED BUILDING STANDARDS  
OF THE  
CALIFORNIA ENERGY COMMISSION**

**REGARDING THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11  
(2013 CALIFORNIA GREEN BUILDING STANDARDS)**

**2013 BUILDING ENERGY EFFICIENCY STANDARDS  
CALIFORNIA ENERGY COMMISSION DOCKET NO. 12-BSTD-1**

**I. Introduction**

The Energy Commission recently adopted the 2013 revisions to the Building Energy Efficiency Standards, in Title 24, Parts 1 and 6, of the California Code of Regulations. If approved by the California Building Standards Commission, these 2013 building standards would go into effect on January 1, 2014.

When the Energy Commission commenced the 2013 Building Energy Efficiency Standards rulemaking, it also proposed updates to the voluntary measures in Part 11 of Title 24, also called CALGreen or the "Reach" Standards. The Energy Commission published an Initial Statement of Reasons ("ISOR") in February, 2012 ([http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2012-02-24\\_ISOR\\_2013\\_Building\\_Efficiency\\_Standards.pdf](http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2012-02-24_ISOR_2013_Building_Efficiency_Standards.pdf)), which describes the purposes, rationales, and necessity of its proposed action. That ISOR fulfills the requirements of California's Administrative Procedure Act (see Government Code section 11340 et seq.). It includes a summary paragraph that explains the rationale for proposed updates to the voluntary appendices of CALGreen.

Following a 45-day public comment period, the Energy Commission tabled its proposed changes to CALGreen in order to fully consider the public comments received, and to develop sufficiently related changes to the proposed language addressing many of the comments.

In summary, the Energy Commission's proposed updates to the CALGreen residential and nonresidential voluntary appendices are prerequisites, which include efficiency measures that should be installed in any project striving to meet advanced levels of energy efficiency, a performance approach for Tier 1 and Tier 2 advanced levels of energy efficiency, and guidelines for additions and alterations to existing buildings, as well as for newly constructed buildings.

This document provides additional explanation for each subsection of the proposed voluntary energy efficiency standards that will be included in Appendix A4 and Appendix A5 of Title 24, Part 11. These explanations will be revised as necessary to reflect the language that is ultimately

adopted by the Energy Commission, and included as part of the Energy Commission's Final Statement of Reasons for all the 2013 Building Energy Efficiency Standards, which covers changes to Title 24 Parts 1, 6 and 11.

**II. The Specific Purpose and Rationale of the Proposed Voluntary Energy Efficiency Measures in Title 24, Part 11 (2013)**

**1. CHAPTER 4, RESIDENTIAL MANDATORY MEASURES, DIVISION 4.2 – ENERGY EFFICIENCY, SECTION 4.201 GENERAL**

**Rationale:** Minimum energy efficiency standards are adopted by the California Energy Commission and continue to be published in Title 24, Part 6. As part of the 2012 Triennial Code Adoption Cycle, previously adopted language in this section is being repealed by the Department of Housing and Community Development (HCD). The California Energy Commission is proposing language which incorporates the same meaning and intent of the language repealed by HCD.

**2. APPENDIX A4, RESIDENTIAL VOLUNTARY MEASURES, DIVISION A4.2 - ENERGY EFFICIENCY, SECTION A4.201 GENERAL**

**Rationale:** As part of the 2012 Triennial Code Adoption Cycle, previously adopted language in this section is being repealed by HCD. The California Energy Commission is proposing language which incorporates the same meaning and intent of the language repealed by HCD.

**3. APPENDIX A4, RESIDENTIAL VOLUNTARY MEASURES, DIVISION A4.2 - ENERGY EFFICIENCY, SECTION A4.202 DEFINITIONS**

**Rationale:** The California Energy Commission proposes to add new definitions for Design Rating and Energy Budget in order to reflect and be consistent with related changes to Title 24, Part 6, to clarify and eliminate ambiguities, and to simplify regulatory language. Based on final coordination with the Building Standards Commission, the definitions in this section may be relocated to a different section of Part 11.

**4. APPENDIX A4, RESIDENTIAL VOLUNTARY MEASURES, DIVISION A4.2 - ENERGY EFFICIENCY, SECTION A4.203 PERFORMANCE APPROACH FOR NEWLY CONSTRUCTED BUILDINGS**

**Rationale:** As part of the 2012 Triennial Code Adoption Cycle, previously adopted language in this section is being repealed by HCD. The California Energy Commission is proposing voluntary green building standards for newly constructed buildings related to energy usage for Tier 1 and Tier 2. These voluntary standards include a performance standard and a limited number of prerequisites. The performance standards include two levels (specified as "Tier 1" and "Tier 2") of advanced energy efficiency which go beyond the mandatory energy efficiency standards in Title 24, Part 6. The prerequisites are cost-effective efficiency measures that should be installed for every building meeting the advanced levels of energy efficiency specified in these voluntary performance standards. These changes improve the clarity and organization of the performance-based advanced energy efficiency standards and will assist local jurisdictions if they choose to adopt these voluntary measures as requirements in local building codes. These changes will further reduce the energy use of buildings and make significant strides toward the state's energy policy goals for buildings.

**5. APPENDIX A4, RESIDENTIAL VOLUNTARY MEASURES, DIVISION A4.2 -**

**ENERGY EFFICIENCY, SECTION A4.204 PERFORMANCE APPROACH FOR ADDITIONS AND ALTERATIONS**

**Rationale:** The California Energy Commission is proposing new voluntary green building standards for additions and alterations projects related to energy usage for Tier 1 and Tier 2. These voluntary standards include a performance standard and a limited number of prerequisites. The performance standards include two levels (specified as “Tier 1” and “Tier 2”) of advanced energy efficiency which go beyond the mandatory energy efficiency standards in Title 24, Part 6. The prerequisites are cost-effective efficiency measures that should be installed for every building meeting the advanced levels of energy efficiency specified in these voluntary performance standards. These changes improve the clarity and organization of the performance-based advanced energy efficiency standards and will assist local jurisdictions if they choose to adopt these voluntary measures as requirements in local building codes. These changes will minimize the energy use of buildings and make significant strides toward the state’s energy policy goals for buildings.

**6. APPENDIX A4, RESIDENTIAL VOLUNTARY MEASURES, DIVISION A4.6 – TIER 1 AND TIER 2, SECTION A4.601 GENERAL**

**Rationale:** As part of the 2012 Triennial Code Adoption Cycle, previously adopted language in this section is being repealed by HCD. The California Energy Commission is proposing language which indicates the specific voluntary measures in Division A4.2 required for buildings meeting the Tier 1 or Tier 2 levels of advanced energy efficiency.

**7. APPENDIX A4, RESIDENTIAL VOLUNTARY MEASURES, DIVISION A4.6 – TIER 1 AND TIER 2, SECTION A4.602 RESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST**

**Rationale:** The energy efficiency portions of the Residential Occupancies Application Checklist are being updated to reflect proposed changes to the voluntary provisions of Appendix A4.2. Updates being made to the Residential Occupancies Application Checklist have no other intended change in regulatory effect from the rationale of the changes previously for the corresponding sections.

**8. APPENDIX A5, NONRESIDENTIAL VOLUNTARY MEASURES, DIVISION A5.2 - ENERGY EFFICIENCY, SECTION A5.203 PERFORMANCE APPROACH**

**Rationale:** As part of the 2012 Triennial Code Adoption Cycle, previously adopted language in this section is being repealed by the Building Standards Commission (BSC). The California Energy Commission is proposing voluntary green building standards related to energy usage for Tier 1 and Tier 2. These voluntary standards include a performance standard and a limited number of prerequisites. The performance standards include two levels (specified as “Tier 1” and “Tier 2”) of advanced energy efficiency which go beyond the mandatory energy efficiency standards in Title 24, Part 6. The proposed language introduces new requirements in the voluntary performance standards for additions and alteration projects. The prerequisites are cost-effective efficiency measures that should be installed for every building meeting the advanced levels of energy efficiency specified in these voluntary performance standards. These changes improve the clarity and organization of the performance-based advanced energy efficiency standards and will assist local jurisdictions if they choose to adopt these voluntary measures as requirements in local building codes. These changes will further reduce the energy use of buildings and make significant strides toward the state’s energy policy goals for buildings.

**9. APPENDIX A5, NONRESIDENTIAL VOLUNTARY MEASURES, DIVISION A5.6 – VOLUNTARY TIERS, SECTION A5.601 CALGREEN TIER 1 AND TIER 2**

**Rationale:** As part of the 2012 Triennial Code Adoption Cycle, previously adopted language in this section is being repealed by BSC. The California Energy Commission is proposing language which indicates the specific voluntary measures in Division A5.2 required for buildings meeting the Tier 1 or Tier 2 levels of advanced energy efficiency.

**10. APPENDIX A5, NONRESIDENTIAL VOLUNTARY MEASURES, DIVISION A5.6 – VOLUNTARY TIERS, SECTION A5.602 NONRESIDENTIAL OCCUPANCIES APPLICATION CHECKLIST**

**Rationale:** The energy efficiency portions of the Nonresidential Occupancies Application Checklist are being updated to reflect proposed changes to the voluntary provisions of Appendix A5.2. Updates being made to the Nonresidential Occupancies Application Checklist have no other intended change in regulatory effect from the rationale of the changes previously for the corresponding sections.

**III. CONSIDERATION OF REASONABLE ALTERNATIVES, INCLUDING THOSE THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS**

In response to comments from California Association of Building Energy Consultants (CABEC) the proposed language for the performance approach for addition and alteration projects to existing residential buildings was substantially modified. The revised proposal is less stringent than the original and better aligns with the energy efficiency improvements that can be achieved in existing residential buildings.

In response to comments from CABEC the proposed language for the performance approach for nonresidential buildings was substantially modified. The revised proposal is less stringent than the original and better aligns with the increased energy efficiency requirements for nonresidential buildings in Part 6 which were adopted by the Energy Commission on May 31, 2012.

In response to comments from the home builder industry, a plumbing manufacturer association, representatives for the plumbing trades, and HCD, a proposed prerequisite for limiting the maximum volume of hot water in the piping of residential buildings was withdrawn.

In response to comments from the home builder industry and interagency discussions, an elective performance approach for zero net energy residential buildings was withdrawn.

In response to comments from commercial refrigeration system designers, supermarket engineers, and the U.S. Environmental Protection Agency, a preliminary draft proposal limiting emissions from specified refrigeration systems (by requiring secondary CO<sub>2</sub> systems, which use CO<sub>2</sub> for refrigerant rather than other typical refrigerants that have high greenhouse gas emission characteristics) was withdrawn.

Based on further discussion at the California Energy Commission, a voluntary performance standard for meeting a specific threshold of expected electricity use was withdrawn.

DATE September 21, 2012